CLAIMS

What is claimed is:

1. A compressor, comprising:

a compressor housing;

compressing means for compressing a refrigerant located within the compressor housing;

a shaft extend from said means;

a pulley mounted to the shaft for rotation therewith;

a hub mounted to the shaft on an outer axial end of the pulley;

an electromagnetic coil for drawing the hub toward the compressor, the electromagnetic coil being located between the compressor housing and the pulley; and

a cap mounted to the pulley for containing any sparks generated by contact between the hub and the pulley.

2. The compressor of claim 1, wherein the cap is mounted to the pulley by interference fit.

3. The compressor of claim 1, wherein the cap has an internal surface with a precisely machined internal diameter that closely receives an outer circumferential edge on the pulley.

4. The compressor of claim 1, wherein the cap always rotates with the pulley.

5. The compressor of claim 1, wherein the outer circumferential edge on the pulley is located on an axially outer end of the pulley.

6. The compressor of claim 1, wherein the hub has an outer circumferential edge with a diameter that is smaller than a diameter of outer circumferential edge on the pulley.

7. The compressor of claim 1, wherein the outer circumferential edge on the hub does not make contact with the internal surface of the cap.

8. In a boat having an engine and a raw-water pump, the raw-water pump having a raw-water intake that draws raw water from a body of water on which the boat floats and circulates the raw water for cooling the engine, the improvement comprising:

a compressor driven by the engine for compressing refrigerant, the compressor having a cap for encapsulating any sparks that are generated by engagement of the compressor;

a refrigerant condenser having a refrigerant passage and a raw-water passage in thermal communication with each other, the refrigerant passage having an inlet connected to an outlet of the compressor, the raw-water passage being connected to the raw-water intake for cooling the refrigerant; and

an evaporator assembly connected between the condenser and an inlet of the compressor for exchanging heat with ambient air in the boat.

9. The boat of claim 8, wherein the cap is mounted to the pulley by interference fit.

10. The boat of claim 8, wherein the cap has an internal surface with a precisely machined internal diameter that closely receives an outer circumferential edge on the pulley.

11. The boat of claim 8, wherein the cap always rotates with the pulley.

12. The boat of claim 8, wherein the outer circumferential edge on the pulley is located on an axially outer end of the pulley.

13. The boat of claim 8, wherein the hub has an outer circumferential edge with a diameter that is smaller than a diameter of outer circumferential edge on the pulley.

14. The boat of claim 8, wherein the outer circumferential edge on the hub does not make contact with the internal surface of the cap.

15. A method of cooling the ambient air on a boat propelled by an engine, the method comprising:

(a) mounting a liquid-cooled condenser to a raw-water intake tube, the condenser having a raw-water passage and a refrigerant passage in thermal communication with each other;

(b) compressing a gaseous refrigerant with a compressor operated by the engine while containing any sparks generated by engagement of the compressor to prevent ignition of any flammable fumes present in a vicinity thereof; then

(c) flowing the compressed refrigerant through the refrigerant passage of the condenser;

while step (c) is occurring, flowing raw water through the intake tube and through the raw-water passage of the condenser, the gaseous refrigerant being condensed into a liquid refrigerant within the condenser by transferring heat from the refrigerant to the raw water flowing through the raw-water passage; then

(d) flowing the raw water from the condenser to an engine cooling system for cooling the engine prior to discharging the raw water exterior of the boat;

(e) flowing the liquid refrigerant from the condenser through an evaporator assembly and passing air across the assembly for transferring heat from the air to the refrigerant; and then

(f) flowing the refrigerant from the evaporator to the compressor.

16. The method of claim 15, wherein step (b) comprises mounting a cap to a pulley by interference fit.

17. The method of claim 16, wherein step (b) comprises closely receiving an outer circumferential edge on the pulley with an internal surface of the cap that is precisely machined internal diameter.

18. The method of claim 16, further comprising always rotating the cap with the pulley.

19. The method of claim 16, further comprising positioning a hub for engaging the pulley inside the cap, such that sparks generated by contact between the hub and the pulley are completely contained within an interior of the cap.